## 14 A RETROSPECTIVE COHORT STUDY OF THE TRENDS OF SEXUALLY TRANSMITTED INFECTIONS FROM 2008–2017

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**Background** To investigate the long-term trends of five kinds of sexually transmitted infections (STIs) from 2008 to 2017 in the Department of Dermatology and Venereology in a large comprehensive teaching hospital in China.

**Methods** We conducted a retrospective analysis of all recorded data which focused on five STIs: syphilis, gonorrhea, chlamydia, genital herpes and HIV/AIDS. We also performed stratified analyses of the age and gender of patients with STIs.

**Results** There were 34,644 STI cases diagnosed: syphilis accounted for 53.43% (18,512), gonorrhea 20.86% (7,228), chlamydia 17.53% (6,072), genital herpes 7.96% (2,757), HIV/AIDS 0.22% (75), respectively. Cases of syphilis significantly increased, while cases of gonorrhea, chlamydia and genital herpes showed a rapid decrease. HIV/AIDS-diagnosed cases had been rare, but were rising in recent years. The top age group for STI prevalence was 20–39 years with a rate of 70.36%. Men were more affected by STIs than women (male:female ratio 1.40:1), but a lower proportion of men than women had syphilis (0.87:1).

**Conclusion** The considerable changes in the prevalence of the five STIs reported in this study highlight the need for improvement in the prevention of STIs and stronger screening efforts to curb STI transmission in young, sexually active people in a timely manner.

## 15 TRANSCUTANEOUS ELECTRICAL ACUPOINT STIMULATION (TEAS) IMPROVES IVF OUTCOME IN PATIENTS RECEIVING VITRIFIED-WARMED EMBRYO-TRANSFER

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**Background** To investigate the effects of TEAS on the clinical outcome of IVF patients receiving vitrified-warmed embryo transfer.

**Methods** 120 patients were randomly allocated into the TEAS treatment group and untreated control group. Endometrial thickness, morphology, blood flow, endometrial receptivity related gene expression and clinical pregnancy rates were compared between the two groups.

**Results** In the TEAS group, endometrial blood resistance significantly decreased after TEAS was administered, with the blood resistance index and systolic peak value and the end-diastolic velocity of blood flow being significantly lower (p<0.05) than that of the control group. Endometrial thickness and percentages of type A and type AB endometrium were higher in the TEAS group (p>0.05). Expression levels of endometrial receptivity related genes, such as ITG beta 3, IL1, IL5, IL8, CCL3, CCL4, CCL8, HOXA10, were higher in the TEAS treatment group than in the control group. TEAS treatment resulted in an increased clinical pregnancy rate, although this was not statistically significant (55.56% vs 40%) (p>0.05).

**Conclusion** TEAS treatment significantly decreases blood flow resistance in the endometrium and increases expression levels of endometrial receptivity related genes. TEAS tends to increase endometrium thickness and improve endometrial morphology, which resulted in an increased clinical pregnancy rate.

## 16 SOCS1 BOX EVOKED EXPRESSION IN MECHANICALLY STRAINED CULTURED MICE VENTRICLE MYOCARDIUM

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**Background** This study investigated SOCS1 box expression in mechanically strained ventricular myocardium in culture transfection preparations.

**Methods** The left ventricle anterior wall strip in mice was mechanically loaded by length stretching during tissue culture. While constructing the SOCS1 vector, intransfection preparations were also carried out. The preparations of mechanically strained cultures continued for 72 hours. After total proteins were extracted, SDS-PAGE assay was used for evaluating 25 kDa band optical density in the cultured preparations. SOCS1box specific expression optical density was calculated in western blot transfer membrane.

**Results** The total proteins in 25 kDa band were highly expressed in transfection preparations; however, mechanical strain induced increased 25 kDa expression but not significantly. SCOS1 box protein was significantly increased in strained but not in transfection preparations. Furthermore, SCOS1 box expression occurred in the precipitate rather than in the supernatant of strain cultured preparations.

**Conclusion** SOCS1 box protein is mechanically strained cellular signaling which is expressed in mechanically strained cultured mice ventricular myocardium. Transfection alone does not make a significant expression in this model, but combination with mechanical straining can dramatically increase nuclear SOCS1 box protein in cultured ventricular myocardium.

## 17 POSTPARTUM LUPUS ENCEPHALOPATHY IN A PATIENT WITH SYSTEMIC LUPUS ERYTHEMATOSUS COMPLICATED WITH ANTIPHOSPHOLIPID ANTIBODY SYNDROME

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**Background** SLE complicated with antiphospholipid syndrome (APS) is very rare during pregnancy. Both SLE and APS can be associated with pregnancy failure, fetal loss and obstetric complications.

**Methods** We report on a 21-year-old female diagnosed with SLE, APS, and postpartum lupus encephalopathy and review the literature at home and abroad.

**Results** In this case, Acl IgA/G/M and ANA were positive. The patient with SLE combined with APS had premature rupture of the membrane for 28+3 weeks. The patient's condition was stable during 1 month of fetal treatment and the child was delivered live. She had a headache and blurred vision after caesarean section. Following the related auxiliary examination, the patient was diagnosed with lupus encephalopathy (activity). After immediate high-dose hormone pulse therapy, the patient's condition gradually recovered and the hormone gradually reduced. Until discharged, the patient had no other discomfort but her vision was 1.5 meters index. Two months after discharge, the general condition of the patient is better, the symptoms of encephalopathy have disappeared and her vision is largely restored.

**Conclusion** SLE patients with APS have a high-risk of pregnancy-related complications. Timely and clear diagnosis and positive and appropriate treatment can improve the prognosis of mother and infant, and reduce the incidence of complications.

## 18 SUCCESSFUL DELIVERY OF A PATIENT WITH LUPUS NEPHRITIS COMPLICATED BY TWIN PREGNANCY

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**Background** Systemic lupus erythematosus (SLE) is an autoimmune inflammatory connective tissue disease that involves multiple organs. Most scholars believe that pregnancy can aggravate SLE and SLE itself can also increase the incidence of adverse pregnancy outcomes. Therefore, in order to reduce SLE activity during pregnancy, the study suggests that pregnancy should be avoided for at least 6 months after the condition stabilizes. Successful delivery of natural twin pregnancy in lupus nephritis is extremely rare.

**Methods** A case of twin pregnancy with lupus nephritis is reported and the literature is reviewed.

**Results** The patient was a young female with twin pregnancies at 33+4 weeks, premature rupture of membranes and lupus nephritis. The 24 hour proteinuria was 4.87 g. Caesarean section delivered two live newborns with weights of 1680 g and 1850 g respectively. The mother and newborns were discharged from hospital 7 days after operation.

**Conclusion** Patients with lupus nephritis have a high risk of pregnancy-related complications. It should be managed jointly by experts in the Departments of Obstetrics and Rheumatology. Closely monitoring the change in the condition and terminating the pregnancy in time are needed to improve the maternal and infant outcome.

## 19 DIAGNOSIS AND TREATMENT OF CARDIOVASCULAR DISEASE BASED ON NONLINEAR NETWORK CONTROL MODEL

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**Background** Cardiovascular disease is one of the main diseases that threaten human health. Its pathological parameters models is the major difficulty in this field. Some hemodynamic parameters can help us improve lesion analysis and diagnosis, such as blood flow, blood pressure, and vascular resistance.

**Methods** We take the blood circulation system as a huge fluid network. A non-linear network model is built based on hemodynamic characteristics of mutual influence between the cardiovascular network, according to the circuit graph theory and system theory. Using the averaging method to obtain the harmonic solution of the periodical forced cardiovascular network, we can make diagnoses and analyses of cardiovascular disease based on blood flow. Some control methods are used to study cardiovascular disease treatment, in order to change blood flow and pressure by changing vascular resistance.

**Results** Taking the cerebral circulation network as a case of a local circulation system, through modeling and data simulation, we can develop different treatment options and methods by selecting different blood vessels as control branches Acupuncture, drug delivery and surgery treatment are improved by controller design. The model can be verified initially through the clinical data, which will provide a scientific reference and basis for treatment of cardiovascular diseases.

**Conclusion** The control parameters are used to control the lesion parameters. This is a new approach to fluid network control for new interdisciplinary applications in biomedical science.